

TABLE 172.065(A)—EXTENT OF DAMAGE—  
Continued

Vertical extent .....	From the baseline upward without limit.
GROUNDING PENETRATION AT THE FORWARD END BUT EXCLUDING ANY DAMAGE AFT OF A POINT 0.3L AFT OF THE FORWARD PERPENDICULAR	
Longitudinal extent .....	0.495L <sup>2/3</sup> or 47.6 feet ((1/3)L <sup>2/3</sup> or 14.5m) whichever is shorter.
Transverse extent .....	B/6 or 32.81 feet (10m) whichever is shorter but not less than 16.41 feet (5m).
Vertical extent from the baseline.	B/15 or 19.7 feet (6m) whichever is shorter.
GROUNDING PENETRATION AT ANY OTHER LONGITUDINAL POSITION	
Longitudinal extent .....	L/10 or 16.41 feet (5m) whichever is shorter.
Transverse extent .....	16.41 feet (5m).
Vertical extent from the baseline.	B/15 or 19.7 feet (6m) whichever is shorter.

<sup>1</sup> Damage applied inboard from the vessel's side at right angles to the centerline at the level of the summer load line assigned under Subchapter E of this chapter.

TABLE 172.065(B)—PERMEABILITY

Spaces and tanks	Permeability (percent)
Storeroom spaces .....	60.
Accommodation spaces .....	95.
Voids .....	95.
Consumable liquid tanks .....	95 or 0. <sup>1</sup>
Other liquid tanks .....	95 or 0. <sup>2</sup>

<sup>1</sup> Whichever results in the more disabling condition.

<sup>2</sup> If tanks are partially filled, the permeability must be determined from the actual density and amount of liquid carried.

### Subpart E—Special Rules Pertaining to a Barge That Carries a Hazardous Liquid Regulated Under Subchapter O of This Chapter

#### § 172.080 Specific applicability.

This subpart applies to each tank barge that carries a cargo listed in Table 151.01–10(b) of this chapter.

#### § 172.085 Hull type.

If a cargo listed in Table 151.05 of part 151 of this chapter is to be carried, the tank barge must be at least the hull type specified in Table 151.05 of this chapter for that cargo.

#### § 172.087 Cargo loading assumptions.

(a) The calculations required in this subpart must be done for cargo weights and densities up to and including the maximum that is to be endorsed on the Certificate of Inspection in accordance with § 151.04–1(c) of this chapter.

(b) For each condition of loading and operation, each cargo tank must be assumed to have its maximum free surface.

#### § 172.090 Intact transverse stability.

(a) Except as provided in paragraph (b) of this section, each tank barge must be shown by design calculations to have a righting arm curve with the following characteristics:

(1) If the tank barge is in river service, the area under the righting arm curve must be at least 5 foot-degrees (1.52 meter-degrees) up to the smallest of the following angles:

(i) The angle of maximum righting arm.

(ii) The downflooding angle.

(2) If the tank barge is in lakes, bays and sounds or Great Lakes summer service, the area under the righting arm curve must be at least 10 foot-degrees (3.05 meter-degrees) up to the smallest of the following angles:

(i) The angle of maximum righting arm.

(ii) The downflooding angle.

(3) If the tank barge is in ocean or Great Lakes winter service, the area under the righting arm curve must be at least 15 foot-degrees (4.57 meter-degrees) up to the smallest of the following angles:

(i) The angle of maximum righting arm.

(ii) The downflooding angle.

(b) If the vertical center of gravity of the cargo is below the weather deck at the side of the tank barge amidships, it must be shown by design calculations that the barge has at least the following metacentric height (GM) in feet (meters) in each condition of loading and operation:

$$GM = \frac{(K)(B)}{fe}$$

where—

K=0.3 for river service.

K=0.4 for lakes, bays and sounds and Great Lakes summer service.

K=0.5 for ocean and Great Lakes winter service.

B=beam in feet (meters).

fe=effective freeboard in feet (meters).

(c) The effective freeboard is given by—